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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/809,043	03/16/2001	Nobuo Aoi	0819-0524	5601

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EXAMINER

TOLEDO, FERNANDO L

ART UNIT

PAPER NUMBER

2823

DATE MAILED: 01/15/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Offic Action Summary	Application No.	Applicant(s)
	09/809,043	AOI, NOBUO
	Examiner Fernando Toledo	Art Unit 2823

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) Responsive to communication(s) filed on 01 November 2002.
- 2a) This action is FINAL. 2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) Claim(s) 1-4 and 6-18 is/are pending in the application.
 - 4a) Of the above claim(s) 1-4 is/are withdrawn from consideration.
- 5) Claim(s) _____ is/are allowed.
- 6) Claim(s) 6-18 is/are rejected.
- 7) Claim(s) _____ is/are objected to.
- 8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on 16 March 2001 is/are: a) accepted or b) objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) The proposed drawing correction filed on _____ is: a) approved b) disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.
- 12) The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) All b) Some * c) None of:
 1. Certified copies of the priority documents have been received.
 2. Certified copies of the priority documents have been received in Application No. _____.
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.
- 14) Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
 - a) The translation of the foreign language provisional application has been received.
- 15) Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)	4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____
2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)	5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)
3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____.	6) <input type="checkbox"/> Other: _____

DETAILED ACTION

Election/Restrictions

1. Due to the amendment filed on November 1st, 2002, the restriction requirement of Paper No. 8 is withdrawn. Claims 6 – 18 have been considered in this Office Action.

Claim Objections

2. Applicant is advised that should claims 7 – 10 be found allowable, claims 11 – 17 will be objected to under 37 CFR 1.75 as being a substantial duplicate thereof. When two claims in an application are duplicates or else are so close in content that they both cover the same thing, despite a slight difference in wording, it is proper after allowing one claim to object to the other as being a substantial duplicate of the allowed claim.

See MPEP § 706.03(k).

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

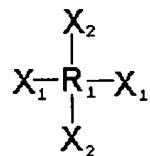
3. Claims 6 – 18 are rejected under 35 U.S.C. 102(b) as being anticipated by Brown et al. (U. S. patent 5,962,113).

In re claim 18, Brown in the U. S. patent 5,962,113; figures 1 – 8 and related text discloses polymerizing first cross-linking molecules having a three-dimensional structure and second cross-linking molecules having a two-dimensional structure to form an

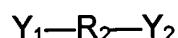
interlayer dielectric film composing a three-dimensionally polymerized polymer having a number of molecular pores (Columns 3 and 4).

In re claim 6, Brown teaches wherein the first cross-linking molecules are first organic molecules having a three or more sets of functional groups in one molecule, the second cross-linking molecules are second organic molecules having two sets of functional groups in one molecule, and the three-dimensionally polymerized polymer is formed by binding the three or more sets of functional groups of each of the first organic molecules and the two sets of functional groups of each of the second organic molecules together (columns 3 – 7).

In re claims 7, 11 and 16, Brown discloses the first organic molecules are represented by [chemical formula 1]



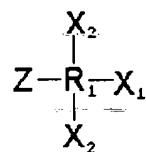
(wherein R_1 is a first organic skeleton, X_1 is a first set of functional groups, and X_2 is a set of a second set of functional groups, X_1 and X_2 being same or different type), the second organic molecules are represented by [chemical formula 2]



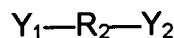
(wherein R_2 is a second organic skeleton, Y_1 is a third set of functional groups, and Y_2 is a fourth set of functional groups, Y_1 and Y_2 being same or different in type), the three-dimensionally polymerized polymer is formed by binding the first set of functional groups and the third set of functional groups together and binding the second set of functional

groups and the fourth set of functional groups together, and the molecular level pores are formed in regions surrounded by the first organic skeleton and the second organic skeleton (Columns 3 – 7).

In re claims 8, 12 and 17, Brown discloses the first organic molecules are represented by [chemical formula 3]



(wherein R₁ is a first organic skeleton, X₁ is a first set of functional groups, and X₂ is a set of a second set of functional groups, and Z is a third set of functional groups, X₁ and X₂ being same or different type), the second organic molecules are represented by [chemical formula 4]



(wherein R₂ is a second organic skeleton, Y₁ is a fourth set of functional groups, and Y₂ is a fifth set of functional groups, Y₁ and Y₂ being same or different in type), the three-dimensionally polymerized polymer is formed by binding the first set of functional groups and the fourth set of functional groups together and binding the second set of functional groups and the fifth set of functional groups together, and then binding the third set of functional groups of the several units together and the molecular level pores are formed in regions surrounded by the first organic skeleton and the second organic skeleton (Columns 3 – 7).

In re claims 9, 13 and 14, Brown teaches forming an interlayer dielectric film 10 including a three-dimensionally polymerized polymer having a number of molecular

level pores inside, by polymerizing first cross-linking molecules having a three-dimensional structure and a second cross-linking molecules having a two-dimensional structure; forming a barrier film on the interlayer dielectric film (column 2); forming a mask on the surface of the barrier film (column 8); forming a concave portion in the surface of barrier film and the interlayer dielectric film by etching the surface barrier film and the interlayer dielectric film using the mask (column 8); and forming an interconnection made of a metal material by filling the concave portion with the metal material (column 8).

In re claims 10 and 15, Brown teaches wherein the first cross-linking molecules are first organic molecules having three or more sets of functional groups in one molecule (column 6); the second cross-linking molecule are second organic molecules having two sets of functional groups in one molecule (column 7), and the three dimensionally polymerized polymer is formed by binding the three or more sets of functional groups of each of the first organic molecules and the two sets of functional groups of each the second organic molecules together (columns 7 and 8).

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Fernando Toledo whose telephone number is 703-305-0567. The examiner can normally be reached on Mon-Fri 8am to 4pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Olik Chaudhuri can be reached on 703-306-2794. The fax phone numbers

for the organization where this application or proceeding is assigned are 703-308-7382 for regular communications and 703-308-7382 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0956.

Fernando Toledo
Examiner
Art Unit 2823

ft
January 9, 2003



Olik Chaudhuri
Supervisory Patent Examiner
Technology Center 2800